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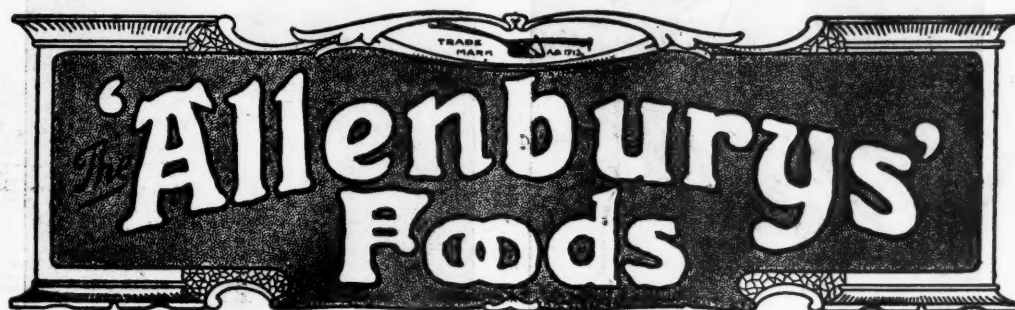
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# THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—3RD YEAR.

SYDNEY: JUNE 10, 1916.

No. 24.

## AN ACCOUNT OF 80 CASES OF WOUNDS OF THE HEAD SEEN IN A BASE HOSPITAL IN FRANCE.

By The Late J. Fairburn Fairley, M.D., F.R.C.S. (Eng.),  
Captain, R.A.M.C.

Captain Fairley was engaged in the preparation of this paper when he was suddenly taken ill and died within a few days. He had collected all the notes, and had drafted the greater part of the paper. I felt that I should complete his account of the cases, so that his work should not be lost. What I have added, I am sure, expresses his opinion as well as mine, as we were jointly responsible for the treatment.

All those who knew Captain Fairley feel deeply his loss, and I am certain the surgical world has lost a most promising surgeon. I have lost a very dear friend.

H. F. Woolfenden, M.D., F.R.C.S. (Eng.),  
Captain, R.A.M.C.

Although, according to modern statistics, at least 50% of gunshot or shell wounds of the head prove immediately fatal on the battlefield, and, in addition, we know that many patients die in the Field Ambulances and Casualty Clearing Stations, yet the cases that reached No. 11 General Hospital were of a very serious type, and in nearly all of them there was severe injury to the cerebral hemisphere. This is borne out by the fact that the dura was found not to be perforated in only eight cases, and of these eight patients, one died from hæmorrhage.

The men reach the Boulogne hospitals usually within 24 to 72 hours after the receipt of their injuries, except for the few patients whose condition at the Casualty Clearing Station is too serious to warrant immediate transit. In the great majority of cases no treatment, except for the localized shaving of the scalp and the application of iodine and some antiseptic dressing, has been instituted.

In the vast number of these cases, with the exception of perforating bullet wounds, the wounds of the scalp and brain are in a very marked condition of sepsis, and it is the problem of dealing with this sepsis that presents the great difficulty and is one of the causes of the high mortality in this series of cases.

### The Nature of the Injuries.

Wounds of the cranium from bullets or fragments of shell can be divided into the following varieties:—

- (a) Perforating, i.e., through-and-through.
- (b) Penetrating.
- (c) Tangential.

#### Perforating.

This through-and-through type of wound presented the following characteristics, and was due always to rifle bullets.

The scalp wound of entrance was small, and resembled a leech bite, whilst the corresponding wound of exit was usually about  $\frac{1}{4}$  inch to 1 inch in diameter and often suppurating. The skull wound

of entrance was just large enough to permit the entrance of a bullet, and was bevelled at the expense of the inner table. The exit wound of the skull was usually about 1 inch in diameter, and there was a greater tendency to splintering and comminution of the bone than in the wound of entrance.

The wounds of the *dura mater* were small, the exit wound being slightly larger and more lacerated than the wound of entrance.

The injury of the brain was as follows: Small fragments of bone were driven through the *dura* into the brain to a depth of 1 inch to  $1\frac{1}{2}$  inches. The brain surrounding the track of the bullet for a distance of  $1\frac{1}{2}$  inches was softened, pulpy and disintegrated; small ecchymotic patches of intracerebral hæmorrhage were frequently observed at a greater distance from the track than this, though the distance rarely exceeded 1 inch. The lateral ventricles, if perforated, contained slightly blood-stained fluid. The surface of the brain surrounding the wound of exit was in all cases more bruised than at the wound of entrance and the presence of small sub-pial hæmorrhage was a constant distinguishing feature of the exit wound of the brain.

#### Penetrating.

The damage done in this type of wound varied with the nature and the velocity of the missile from simple depressed fracture without perforation of the *dura* (unfortunately very rarely seen in this Hospital) to enormous comminuted depressed fractures, with great laceration of the brain, the presence of splinters of bone, and the foreign body embedded in the brain substance when the foreign body had penetrated the *dura*.

The damage done to the brain was unfortunately greater than in the through-and-through variety of wound, although the track was much shorter. The missile causing this type was usually a piece of shell, which, fracturing the outer table and making greater inroads on the inner table, drove large pieces of bone deep into the brain substance, frequently opening the lateral ventricle.

The appearance of the brain tissue was the same as in the perforating variety of injury, except that the brain damage was invariably more extensive along the track of the missile, and was almost invariably accompanied by marked septic changes, as shown by the presence of offensive pus and disintegrated brain. Adhesion of the pia and arachnoid to the *dura* were almost always present, so that the septic changes were limited to the track and brain, and not accompanied by any meningitis.

Serious injury of the brain from *contrecoup* was only seen at two post mortem examinations.

#### Tangential.

The amount of the injury done when the missile struck the skull at a tangent varied chiefly with the

velocity of impact, and to a less extent to the variety of the missile.

The rifle bullet caused the majority of tangential wounds and did, on the whole, much greater damage than shell fragments striking the skull in a similar way.

In the case of such rifle bullet wounds, the entrance and exit wounds in the scalp were close together, generally about 1 inch apart. The skull usually presented an elongated, oval, punched-out hole, bevelled greatly at the expense of the inner table. The remarkable fact was the great distance the fragments of depressed bone were driven into the brain. The brain tissue was greatly lacerated and disintegrated, and the lateral ventricles were liable to be damaged by the indriven fragments.

In one perfectly typical case of tangential injury from a rifle bullet, which impinged on the skull 2 cm. below the left parietal eminence, a piece of bone was localized by X-rays 3 cm. deep to a spot 2½ cm. below the opposite parietal eminence. Here the indriven bone had traversed the left hemisphere, with its lateral ventricle, and was lying in the white matter of the opposite cerebral hemisphere, just deep to the grey matter.

No case of simple grooving of the skull by a rifle bullet has been seen in this series.

Occasionally, both with penetrating and tangential injuries, large linear fractures, radiating from the point of impact of the missile, have been found. In all cases the skull was abnormally hard and compact, and stoutly resisted the trephine at subsequent investigation.

Linear fractures have not been observed, except as a concomitant part of grosser damages.

Fractures of the base spreading from the vault have been observed in only two cases. In both cases the skull was extremely hard. On account of the area of the impact of the missile being so localized and its velocity so great, they are unlikely to be a common complication of a wound of the vault, as the tendency is for the damage to remain more or less localized, unless the bone is abnormally hard and brittle.

#### Diagnosis.

In the great majority of instances, it was self-evident that the patient was suffering from cerebral injury, but the data collected by a careful and exhaustive examination, both local and general, were of great assistance in furnishing indications for treatment.

#### Local Examination.

The scalp should be carefully examined all over, and it is wise to shave it. Unless this is done, a tiny entrance wound may readily be overlooked, since the attention may be focussed on to the larger and more obvious exit wound, which is liable to be mistaken for a simple penetrating wound. The scalp covered with hair and begrimed with blood and mud is excellent cover for the small wound of entrance.

In the case of a single wound it is desirable to investigate many points. Is there a depressed fracture? Is the dura mater intact? If not, to what extent has the structure along with the subjacent

brain been lacerated? If the dura has been penetrated, to what extent has bone been driven into the brain, and is a foreign body present?

In answering these questions X-rays gave very reliable and invaluable information. Occasionally, nothing was seen to be abnormal on the plate, although afterwards a slight depression was felt in the bone with a probe, but these injuries were, comparatively speaking, slight and were certainly very rare in this series of cases.

It may therefore be said that an X-ray photograph or photographs are indispensable to the surgeon who wishes to have an accurate answer to the above questions and sufficient data to base rational operative procedures on. Only one case of this series was so urgent that the operation could not be delayed until this procedure had been carried out.

In the absence of X-rays, a probe, used with reasonable care, will give a great deal of information. If the means of taking an X-ray photograph are at hand, the probe should certainly not be used prior to the examination of the photograph. If the photograph be negative, then it may be permissible to employ a probe, if there be any reason to suspect that a depressed fracture has not been disclosed by the plate.

#### General Examination.

The general examination of the patient on admission showed the cases to be in the following conditions:—

- Cases of advanced compression.
- Cases of early compression.
- Cases of cerebral irritation.
- Cases of concussion.

Cases in which the mental condition was good.

In this series it was rare to find signs of marked compression, although there was often a considerable increase in the intra-cranial pressure at the operation. There were frequently a considerable degree of dulness and distinct signs of irritation. On the other hand the mental condition in the less severe cases was astonishingly clear, and the history obtained from patients showed that even when small foreign bodies have penetrated the cranium, and have lodged in the brain, the patient may not have lost consciousness. Some of these patients have been questioned closely as to their subsequent movements, and the statement, which has been corroborated by eye-witnesses, has been made that they have walked to the dressing station after the receipt of the injury. Usually, however, there was a considerable blank in the patient's memory.

The pulse and temperature were variable, and depended on the relation and degrees of compression and the amount of the absorption from the sepsis.

#### Neurological Examination.

The data obtained from the detailed examination of the nervous system shows the amount of damage done to the non-silent areas of the brain. Some of the damage was due to the permanent destruction of the brain, but a large part of it was temporary and due to concussion changes, œdema, thrombosis, etc. These pathological changes put out of action areas of the brain which recovered later. Numerous cases



have illustrated this, especially those where there was thrombosis of the superior longitudinal sinus.

The great value of an immediate and thorough neurological examination is that the progress of a case can be watched, and subsequent changes can be appreciated immediately. The increase of paralysis, etc., or what is quite as important, the absence of improvement of these symptoms, are facts which are of great value in shaping the treatment and prognosis.

#### *Papilloedema.*

The variety of marked papilloedema in these cases has been striking. Three cases only had swelling of the discs of more than 2 D, although at the operation several had definite increase of intra-cranial pressure. Blurring of the edge of the disc and fullness of the veins were, however, frequently present.

The 79 cases that are included in this series are classified in the following tables:—

Table I.

	Recovered.	Died.
Frontal .. .. .	18 ..	7
Parietal .. .. .	15 ..	14
Temporal .. .. .	6 ..	5
Occipital .. .. .	6 ..	8
	45 ..	34

Table II.

	Recovered.	Died.
Tangential .. .. .	23 ..	18
Penetrating .. .. .	13 ..	5
Perforating .. .. .	9 ..	11
	45 ..	34

Table III.

	Recovered.	Died.
Operation .. .. .	23 ..	27
No Operation .. .. .	22 ..	7
	45 ..	34

Table IV.

	Recovered.	Died.
Dura perforated .. .. .	38 ..	33
	8 ..	1

#### **Causes of Death.**

The causes of death in this series of cases, as shown by post-mortem examination, were—

	Cases.
(1) Meningitis .. .. .	
(a) Spreading from wound .. .. .	7
(b) Via lateral ventricle .. .. .	13
(2) Encephalitis .. .. .	
(a) Acute fulminating .. .. .	2
(b) Acute traumatic .. .. .	3
(3) Hæmorrhage .. .. .	3
(4) Leakage of cerebro-spinal fluid .. .. .	2

In addition, one patient died apparently of shock following a decompression operation which was undertaken, and in four cases no post-mortem examination was done, owing to the difficulties over which we had no control.

#### **Meningitis Spreading from the Wound.**

This complication, which, at first sight, one might have expected to be more common, was only found in seven cases. The meninges of the brain appear to have a marked power of shutting off the subdural space, and so localizing the sepsis to the damaged brain and bone. In all these cases the inflammation was extensive, and spread over the surface

of the affected side. The pus collected in the middle fossa, round the tip of the temporo-sphenoidal lobe of the affected side, and to a less extent overflowed into the posterior fossa.

In all these cases the onset of the meningitis was marked by headache, a rise of temperature, and a gradually increasing hernia. The classical symptoms of acute suppurating meningitis, as seen in civil practice, were masked by the fact that the increase of intra-cranial pressure was relieved by the gradual increase of the hernia cerebri. Convulsions and ocular palsies were usually absent and toxæmia appeared to play a more important rôle in the cause of death than bulbar paralysis.

#### **Basal Meningitis via the Ventricles.**

The lateral ventricles, running through a considerable extent of the cerebral hemispheres, are liable to be placed in communication with the external world by almost any gunshot wound which causes a compound fracture of the skull with laceration of the dura.

In many of the fatal cases from basal meningitis the ventricle had been opened either by indriven fragments of bone or by the foreign body itself. In others the ventricle was intact at the time of the operation and became infected by the encephalitis, which caused disintegration of the brain matter lying between the cavity produced by the wound and the ventricle. In no case was infection of the ventricle present apart from disintegration of the intervening brain or actual involvement of it in the wound.

It is certain that this spread of the infection to the ventricles is due to defective drainage. It was doubtless commoner when rubber tubes were used for drainage purposes. These tubes were very liable to get blocked up by the disintegrated brain matter, with the result that the infection spread into the brain. Another factor met with was the certain degree of hydrocephalus that is nearly always present in the brain injuries.

At the post-mortem examination a considerable amount of disintegrated or softened brain, lying between the hernia and the ventricle, was often found, or the ventricle was involved in the hernia. The lateral, third and fourth ventricles were distended with pus, as also were the cisternæ at the base of the brain. The increase of pressure causing the hernia was apparently due to the blocking up of the outflow of cerebro-spinal fluid, and death was caused partly by pressure and partly by toxæmia.

Sometimes there was an escape of cerebro-spinal fluid from the brain during life, but it was not marked.

#### **Encephalitis.**

##### *(a) Acute Fulminating Encephalitis.*

In two of the cases of this series, death was due to the destruction of a large area of brain substance by infection spreading out from the wound in the brain. The wound was of the penetrating variety in both cases. The patients became gradually unconscious, and died within five days. The temperature was normal or subnormal, there was no tendency to hernia, but blood-stained material, consisting of disintegrated cerebral substance of the consistency of

gruel drained away through the wound in the skull. In both cases the greater part of one cerebral hemisphere had been softened and destroyed, so that it presented the extraordinary appearance of a bag of mush contained in the meninges. This excessive destruction of the cerebral matter during life is most amazing when seen for the first time. In one case only the anterior half of the frontal lobe and part of the occipital lobe were recognizable, whilst in the other case only the anterior two-thirds of the frontal lobe remained of the cerebral hemisphere of that side.

The brain in these cases appeared to have undergone a process of acute softening and disintegration, due, no doubt, to bacterial infection, but, unfortunately, a series of accidents prevented bacteriological investigation being completed, although cultures were taken. Lieutenant-Colonel Gordon Holmes tells me that in similar cases occurring in other hospitals *bacillus perforans* was recovered.

#### Acute Encephalitis.

In these cases extensive superficial laceration of the brain was seen post-mortem. Softening and disintegration had taken place around the lacerated area. The dura was firmly adherent to the pia at the wound, and no infection of the meninges was present. The ventricles were also free from infection. The brain matter around the softened area was oedematous, but there was no general oedema of the brain.

#### Hæmorrhage.

In three cases death was due to hæmorrhage into the brain, occurring some time after the injury.

##### Case 1.

Admitted two days after a tangential shell wound of the left parietal region. The patient was normal mentally, and only complained of headache. The nervous system was normal. An X-ray photograph showed a depressed fracture. The temperature was 98° and the pulse-rate 68.

On the next day, the depressed bone was removed and the dura exposed. There was no perforation and the dura looked normal; the brain was pulsating well, although the pressure was slightly raised.

On the next day, headache was still bad. The pulse-rate was 78.

Lumbar puncture was done, and 18 c.cm. of clear fluid withdrawn. Early in the afternoon of the next day (the second day after the operation), the patient got out of bed and attempted to go to the window, as he complained of severe heat. He was taken back to bed, but half an hour later was found to be moribund. The breathing was Cheyne-Stokes in character; 18 c.cm. of clear fluid escaped on lumbar puncture. The temperature was 104° and he died in about half an hour.

The post-mortem examination showed the following lesions: Under the intact *dura mater* there was an area of softened brain, about half a crown in size and about 1¼ cm. deep. A large amount of dark blood had gravitated over the cerebral hemisphere, and was lying in the middle fossa. About 57 c.cm. of blood had penetrated to the posterior fossa, and was lying round the pons and medulla.

This case was regarded as one of delayed intradural hæmorrhage, because there were no signs of

hæmorrhage at the operation, and because, when lumbar puncture was carried out on the following day, no signs of blood were detected in the fluid.

It may be argued that this case should be regarded as evidence in favour of opening the un-lacerated dura in doubtful cases. This is, however, not the case, as it is not the local collection of blood, even if it be present, that causes the danger, but the collection of blood lying around the base of the brain and causing pressure on the medulla. Moreover, a collection of blood in such a situation could not be influenced by operation, even if the dura were opened. This contention is borne out by the next two cases.

##### Case 2.

The patient was admitted with a perforating wound of the occiput. He had been operated upon at a Casualty Clearing Station four days before.

Shortly after admission to No. 11 General Hospital he commenced to have numerous fits. He became unconscious and died from bulbar paralysis the same day. Lumbar puncture showed blood-stained fluid.

At the post-mortem examination it was found that the operation had consisted of the removal of bone around the exit wound, and that the brain had been drained by means of a rubber tube. The occipital lobes had been perforated by a rifle bullet. The brain tissue around the track was softened and disintegrated; a large amount of blood was effused and was lying around the posterior aspect of the hemisphere. About 8.5 c.cm. (i.e., 3 iii.) of blood was present in the posterior fossa, and when the brain was removed from the skull blood-stained fluid welled up from the spinal canal.

##### Case 3.

This case came to the writer's observation on the day of its fatal termination. The patient was suffering from a perforating rifle bullet wound of the occiput. He was blind, but there was no paralysis.

Four days after the head injury he began to have numerous left-sided fits, and developed a left hemiplegia, and died two days later. Lumbar puncture showed blood-stained fluid. No operation had been performed.

The post-mortem examination revealed a perforating wound of the occipital lobe, with about 114 c.cm. of blood collected in the middle and posterior fossa. The spinal canal contained blood-stained fluid.

#### Leakage of Cerebro-Spinal Fluid.

In two cases leakage of cerebro-spinal fluid from the wounds caused the patient to die.

Both patients were suffering from tangential wounds of the skull, and X-rays showed large in-driven fragments of bone. In both cases there was an escape of cerebro-spinal fluid before the operation, and the wounds were very septic.

The operations consisted of the removal of the in-driven bone, and the drainage of the brain, on account of the sepsis.

The tubes were removed on the third day, but cerebro-spinal fluid continued to pour out, in spite of attempts to plug the opening and to control the overflow by posture. The fluid ran away in such

large quantities that the dressings, pillows and bed were soaked.

Towards the end the patients presented the appearance typical of cholera patients *in extremis*. The eyes were sunken, cheeks hollow, the body in a condition of extreme emaciation. The tongue was dry and brown, very little urine was passed and great thirst was present. The patients died respectively on the ninth and tenth days after operations.

At the post-mortem examination nothing was found except the lacerated cavity between the ventricle and the wound on the surface, from which the cerebro-spinal fluid escaped. All infection had apparently been washed out of the ventricles.

#### Treatment.

In this series of cases operation has not been the invariable rule when a compound depressed fracture has been found. An attempt was made in each case to decide whether the patient would be benefitted by operation, or whether his chances of recovery would be better if left unoperated upon. Some cases were obviously hopeless from the point of view of operation, as the damage was too extensive; in other cases the operation would be more likely to do more harm than good. As examples of the latter we have the majority of the perforating bullet wounds of the skull, the wounds involving the superior longitudinal sinus, and those cases where the foreign body is in an almost inaccessible place.

Considering these cases in a little more detail, many of the perforating wounds are due to a bullet which, while traversing the cranium, has carried much less infection into the brain than a penetrating shrapnel wound, so that there is a very much greater chance for the brain to escape the perils of infection and for the damaged and disintegrated brain along the track to be absorbed; there is also less chance of fragments of bone being lodged in the brain. Moreover, any attempt to drain the track, if it were considered necessary, would, on account of the great liability for the ventricle to have been opened, almost certainly lead to a cerebro-spinal fistula and possibly to a fatal issue.

In the case of wounds which, from their position and the presence of the typical symptoms of weakness of the shoulder and ankles, together with rigidity of the arms and legs, increased knee jerks and double Babinski, are thought to involve the superior longitudinal sinus, operation is certainly contraindicated, as further interference with the sinus is only likely to obliterate its lumen further. Moreover, these cases do extremely well if left alone, as is shown by the eleven cases in this series in which no operation was performed and which all showed marked improvement.

Again, we have the case where a foreign body has been driven into the brain and lies deeply in some inaccessible place, such as the middle line.

Here an operation to remove it would almost certainly do too much damage and probably open up a ventricle. Cases of this nature must be left alone, and the chances of recovery depend on the relative asepsis of the wound. That these patients can recover is shown by two cases in this series.

On the other hand, there are the very mild cases, in which there is a slight fracture and depression, demonstrable by the X-rays, and yet the patient has no symptoms that would lead to the suspicion of a lesion of the *dura mater*. If the *dura* is injured the piece of bone may plug up the opening, and its removal might well allow sepsis to enter. In this type of case the surgeon is disposed to hold his hands, although he is quite aware of the scorn that is so often cast on the treatment by those who see the patient later. The statement so often quoted that the fracture is the cause of subsequent epilepsy appears to lack reason, and the proof that operation will remove any tendency to epilepsy is wanting. The epilepsy appears more probably due to the formation of scar tissue in the brain. The free incision of the intact *dura mater* for slight causes, as has been advocated in recent publications, appears to be a procedure more likely to give rise to such scar tissue, as well as to risk the chance of infecting the brain and membranes.

The type of case in which operation is most strongly indicated is the penetrating or tangential wound of the skull, where either a foreign body or fragments of skull are seen by X-rays to be embedded in the brain, provided they are capable of removal, or when a skiagram reveals a definite depressed fracture which has probably lacerated the *dura*. These cases are almost invariably markedly septic, and call for operative procedure.

The operation undertaken in the majority of the cases consists in the following procedure: The wound is excised; this may be done as a preliminary or as the final step of the operation, preferably the former. After this a large flap is turned down and covered with gauze. A small trephine hole is made near to the gap in the skull, and the bone removed by forceps around the wound of the *dura*.

The depressed bone is then cautiously removed, and the tract in the brain gently explored. This often allows a considerable amount of offensive brain matter and pus to escape. The foreign body, if present, or the indriven fragments of bone, are cautiously removed and disintegrated brain washed away by a gentle stream of warm saline solution, which is kept running on the wound from the time the flap has been turned down. After this the track is drained in nearly all the cases, on account of the sepsis. Formerly, a rubber tube was used, but in the later cases the perforated metal tube, introduced by Lieutenant-Colonel Gordon Holmes and Lieutenant-Colonel Sargeant, has been employed, with much better results than the rubber tube, as the latter invariably gets blocked, while the metal one can be kept clear. After the tube is put in, the flap is replaced and the tube filled up with glycerine.

The employment of glycerine was suggested by Lieutenant-Colonel Gordon Holmes, who advised its use for three reasons. It has a hygroscopic action, and so acts like hypertonic saline; it also serves a very important function in emulsifying the disintegrated brain matter, thus allowing the tube to be kept clean and preventing the blockage of the lumen of the tube. In addition, owing to the inhibitory action of glycerine on the growth of organisms, the



multiplication of bacteria in the wound is probably prevented.

When by good fortune the *dura mater* is found intact beneath the depressed bone, its integrity has been respected. The intact *dura* is a most valuable barrier against the danger of infection, and to incise it on account of the suspicion of blood clot or the presence of symptoms pointing to the damage of the brain underneath, appears to be a very hazardous proceeding, especially in cases where there is grave infection of the scalp and bone wound, as has been the case in practically all of this series. In the first place, a large amount of hæmorrhage over the surface of the brain, in a position in which it can be dealt with, is exceeding rare; secondly, infection of the meninges has been seen to follow the opening of the *dura mater* in the practice of other surgeons; and, thirdly, the incision and turning out of disintegrated and hitherto uninfected brain tissue appears to be of doubtful value and more calculated to lead to the formation of scar tissue than to its avoidance.

Large decompression operations seem to be very rarely called for, and were only carried out in a couple of the earlier cases, on account of very high intra-cranial pressure. Probably in these cases a smaller operation might have been employed, if the therapeutic use of lumbar puncture had been realized at that time.

Lumbar puncture has proved of the utmost value. It has proved of great use both in the operating theatre and in the wards. During operation, it is very valuable in reducing a high intra-cranial pressure. It permits the removal of fragments and foreign bodies to be done more easily, and also prevents the tendency to the formation of hernia of the brain through the wound. The necessity for decompression operation is thus obviated.

As a therapeutic measure during the treatment of these cases, lumbar puncture has proved extremely beneficial. By reducing a too high intra-cranial pressure headache is relieved, the formation or increase in a size of a hernia cerebri is checked, and many of the cases of perforating wounds are tided over the dangerous period of high intra-cranial pressure due to the œdema of the brain.

As regards the after treatment, much need not be said. The tube is usually kept in for a week to ten days; it is cleaned out twice a day by means of a spoon and saline or sodium hypochlorite solution and glycerine is poured in. If a hernia is forming, it is kept in check by lumbar puncture, if possible, and dressings soaked in spirits applied.

Urotropine was given by the mouth in a good many of the cases. The presence of urotropine was clearly demonstrated in the cerebro-spinal fluid in the cases tested; but formaldehyde was not found in the cerebro-spinal fluid. This absence of formaldehyde might be expected, on account of the alkaline reaction of the cerebro-spinal fluid, and urotropine itself does not appear to exert any inhibitory action on the growth of organisms.

#### Note.

Captain Fairley was commencing an investigation in conjunction with Captain Strathy on this point

at the time of his death. In no case was any formaline found in the cerebro-spinal fluid in cases where urotropine had been given. Attempts to make the cerebro-spinal fluid acid by giving sodium hypophosphate and ammonium benzoate also failed, as was to be expected. The addition of urotropine to alkaline media had no inhibitory effects on the growth of organisms in the media, but inhibited completely the growth of organisms in acid media in 1 to 600 dilution.

A great debt is owing to Lieutenant-Colonel Sergeant and Lieutenant-Colonel Gordon Holmes for their most valuable help and advice in the examination and treatment of the patients, and to Lieutenant-Colonel J. Hay Campbell for facilities in the treatment of the cases and for permission to publish these notes.

## Public Health.

### THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending May 27, 1916:—

	Metropolitan Districts.		Hunter River Districts.		Remainder of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever ..	10	3	2	0	25	4	37	7
Scarlatina ..	75	1	1	0	76	1	152	2
Diphtheria ..	80	3	4	1	143	6	227	10
C'bro-Sp'l Menin.	0	1	0	0	5	3	5	4
Infantile Paralysis	3	0	0	1	2	0	5	1
Pul. Tuberculosis	59	8	3	0	†	..	62	8
Malaria ..	1	0	0	0	1	0	2	0

† Notifiable only in the Metropolitan and Hunter River Districts.

The distribution of the cases of cerebro-spinal meningitis is as follows: There were 3 cases at the military camp at Goulburn, affecting individuals of 18, 18 and 20 years respectively. The fourth patient is at Wentworth, a young man, aged 20 years, who had received a visitor from Bendigo military camp. The last patient was a male, aged 16, living at Broken Hill. The one death referred to in the metropolitan combined districts was of a baby, aged 12 months, living at Chatswood.

### THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending May 28, 1916:—

	Metropolitan.		Rest of State.		Totals.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Diphtheria ..	113	2	38	4	151	6
Scarlatina ..	29	0	20	0	49	0
Enteric Fever ..	9	1	10	1	19	2
Pulmonary Tuberculosis	31	8	14	7	45	15
C'bro-Spinal Meningitis	18	—	22	—	40	—
Infantile Paralysis	0	—	1	—	1	—

### INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending May 27, 1916:—

Disease.	No. of Cases.
Diphtheria ..	42
Pulmonary Tuberculosis ..	6
Cerebro-Spinal Meningitis ..	2
Enteric Fever ..	23
Erysipelas ..	2
Scarlatina ..	17
Infantile Paralysis ..	2
Malaria ..	1
Varicella ..	1



## The Medical Journal of Australia.

SATURDAY, JUNE 10, 1916.

### Cerebral Surgery at the Front.

In the present issue we publish an article of marked merit by a brave Australian surgeon, whose name is entered in the Roll of Honour. Working strenuously for the safety of the men fighting, he sacrificed his own life. The extent of our loss can never be known. This article reveals a capacity for accurate observation under conditions which cannot be described as favourable, and underlying the record of facts we can recognize marks of a deductive mind. Dr. Fairburn Fairley was able to tabulate his cases into appropriate groups, and to measure the value of each sign in the formation of both diagnosis and prognosis. He registers his data without any self-praise, but the reader will note that in his insistence that an intact *dura mater* should not be incised, no matter how tempting it may be to investigate the cause of the altered appearance, he was practising surgery as an exact science. Opinions may differ from his in regard to the aetiology of epilepsy, but everyone must admit that he makes out a good case for his refusal to run unjustifiable immediate and remote risks.

### THE PATHOGENIC ANAEROBES.

Since the outbreak of the war an immense amount of bacteriological work has been carried out on the nature of wound infections. Much of this work has been characterized by the identification of aerobes and anaerobes after rapid isolation and superficial study of the cultural and morphological attributes. The object of this work has been to determine the pathology of gas gangrene and other forms of wound infection, and to establish a basis for specific therapy. The importance of the part played by the anaerobes has been recognized by the majority of the workers, and, consequently, closer attention has been focussed on this class of bacterium than on the more easily isolated aerobes. Investigations conducted during the past few years have demonstrated that the older teaching in regard to bacteria,

which grow solely in the absence of oxygen, has to be modified not inconsiderably. The essential conditions of free growth of many of these bacteria still need elucidation, and we have yet to ascertain the more delicate reactions under varying conditions of culture. The student of bacteriology is struck with the alleged wide variation of many of the anaerobes isolated from pathological tissue, and is confused by the lack of accurate signs differentiating one strain from another. A serious attempt to introduce order into this somewhat confused state of affairs was made by von Hibler in 1908. His classifications are not wholly satisfactory, and considerable obscurity remains after his complicated descriptions are mastered. None of the better-known textbooks supply the want, and only a few rays of clarity have escaped from monographs issued on special subjects at somewhat long intervals.

A very distinct advance has been achieved by Miss Muriel Robertson, in a remarkably clear contribution to the January issue of the *Journal of Pathology and Bacteriology*. She points out in a quaint fashion that the most scrupulous care is necessary in testing the purity of the cultures when work of any greater scientific moment than mere diagnosis is required. We fear that much diagnostic work is conducted on the "not too bad" principle. In the record of her investigations will be found the story of months of patient attempts to obtain constant characteristics, by repeated picking out of colonies from plates and countless endeavours to separate organisms in pure culture. As a result of this labour, she is able to demonstrate that an organism corresponding with the *Bacillus perfringens*, the bacillus of malignant oedema of Koch and an end-spore-forming bacillus, which does not liquify gelatin and which is apparently identical with von Hibler's bacillus No. IX., have been isolated from material derived from infected wounds. In the case of the first mentioned bacillus, she was compelled to resort on one occasion to culture from a single bacillus. A remarkable fact is brought to light. The bacillus which she identifies as the bacillus of malignant oedema is frequently present in combination or symbiosis with *Bacillus perfringens*, and the pathogenicity of the combination is materially greater than that of the latter in pure culture. The characters of the mixed cultures

vary within wide limits, and it is due to this fact that the variations in the cultural behaviour of *Bacillus perfringens* have so frequently been described by less cautious bacteriologists.

The observations and experiments will undoubtedly furnish a starting-point for extended investigations into the bacteriology of gas gangrene and spreading infection of wounds. By themselves, however, the progress of knowledge in this branch of science would be restricted unless a better classification of the anaerobes were provided. The classification of von Hibler is too complicated, and is not based on a sufficiently firm foundation to justify full acceptance. She has therefore gone back a step, wisely and cautiously, and has suggested a primary classification into four divisions as a working problem. The four groups are the Rauschbrand, the perfringens, the non-liquifiers of gelatin and the proteolytic. We cannot enter into a discussion on the arguments which she adduces in support of the contention that the *Bacillus oedematis maligni* is distinct from *Bacillus putrificus*, in this place, but we would emphasize the necessity of distinguishing the several characteristics of each group and species, and of refusing to attempt short-cuts at the expense of well-established data.

#### NOTIFICATION OF INFECTIOUS DISORDERS.

In a previous issue we called attention to the action of the Retrenchment Committee in Great Britain in regard to the introduction of an economy at the expense of the medical profession. In the meantime, a Bill, entitled the Local Government (Emergency Provisions) Bill, has been introduced into the House of Commons and on April 11, 1916 (see the *British Medical Journal*, April 15, 1916, p. 565), the provisions were considered in committee on the second reading. A deputation consisting of the Chairman of Representative Meetings, the Chairman of the Parliamentary Sub-committee of the Medico-Political Committee and the Medical Secretary of the British Medical Association had waited on the Parliamentary Secretary of the Local Government Board and had urged the reconsideration of the proposed reduction during the period of the war of the fee payable for notification by medical practitioners,

on the ground that the fee is paid not for clerical labour, but for professional knowledge and skill. The reply given was unfavourable, and, as a perusal of the brief account of the debate in committee will reveal, the members of Parliament supported this decision, in spite of repeated protests from the medical members.

Medical practitioners do not notify cases of infective disease from choice, but because the law requires them to do so. No resistance is offered, chiefly because the profession is alive to the fact that the knowledge obtained by this act enables the public health authorities to institute measures for the reduction of disease and eventually for its extermination. The necessity of regarding the knowledge gained in the course of professional practice as inviolable is waived in view of the immense importance to the community of this knowledge. The law determines that it shall be so. Were the onus placed on the patient or his relatives, the information would be inexact and unreliable. Since the community gains by these arrangements, it is necessary that the State, representing the community, shall remunerate the practitioner. The State pays not for the writing of the certificate, but for the reliability of the information. Members of the House of Commons, who claim that when the certificate of notification is filled in the medical practitioner has already exercised his skill in diagnosing the complaint, ignore the facts and trade on a quibble. The practitioner sells to the State the result of his investigations, and the price should be a reasonable one. There is only one relieving aspect of this ungenerous behaviour to a profession which has brought so much sacrifice to the Empire. This is that the measure is an emergency measure, and is not intended to be permanent, and, as Mr. Hayes Fisher stated, the clause would be retained and the doctors—at all events for the period of the war—would, he hoped, accept the smaller fee in the place of the present one. We can only repeat Sir Philip Magnus' words that the Local Government Board has made a grave error.

#### FACTORS IN DIETETICS.

The studies of a number of investigators have established the fact that animals cannot grow when limited to rations of purified proteins, fats, carbohydrates and inorganic salts. Thus it has been

shown that the addition of certain fats, as butter, to a diet of casein, dextrin, lactose and a salt mixture of appropriate composition stimulates the growth of rats. If lactose is omitted, the addition of butter does not induce growth. When a diet free from lactose but containing butter is supplemented by an aqueous or alcoholic extract of wheat germ, growth proceeds at a normal rate. Butter does not relieve the polyneuritis of birds fed upon polished rice or other highly purified foodstuffs. This condition is relieved by the use of aqueous extracts of several natural foodstuffs. It has therefore been suggested that, in addition to the recognized essential constituents of a successful diet, *viz.*, proteins, fats, carbohydrates and inorganic salts, the growing animal requires two substances or groups of substances; one, which is soluble in fats, is contained in fats from certain sources; the other, soluble in water or alcohol, is found widely in the animal and vegetable worlds. More recent investigations have elucidated somewhat the significance of these two classes of foodstuffs. The curious degenerative changes that occur in the fibres of peripheral nerves of starved and ill-fed animals are inhibited by the water-soluble substances alone. Such substances have been designated as vitamins by Funk. This name is somewhat unsatisfactory, as its termination, amine, suggests information as to its chemical nature or constitution, which is not in reality implied by the use of the word. The absence of vitamins from the diet leads more or less quickly to serious pathological changes. Beri-beri and scurvy in man represent conditions occasioned by deficiency in these bodies. The substances soluble in fats have apparently no part in warding off pathological changes. Their absence leads to cessation of growth. Young rats deprived of these substances will maintain a constant weight for months, but will commence to increase in weight on the addition of this class of substance to their diet. Our knowledge of the functions of these substances will continue vague until they are isolated in pure form and subjected to chemical analysis. In the clear light of chemical constitution it will be easy to judge of the possibilities of many of the hypotheses put forward to explain these facts. When the chemical constitution of the protein molecule was unknown, it was easy to hypothecate the formation of body-fat from protein. When the structure of the protein molecule from nuclei of amino-acids was demonstrated, the difficulties in accepting such a derivation were enormous. A simple splitting off of fat from the molecule of protein was obviously impossible. Further research then showed that the so-called classical experiments, proving that a dog formed fat from lean meat, were erroneous.

#### A NOVEL SUGGESTION.

The people of Great Britain have been frequently admonished to practise economy during the last twelve months. They have striven to lessen their expenditure in many ways. Their efforts have encouraged many fertile minds to seek out wasteful habits, which may be corrected without loss of convenience or comfort. A correspondent has written

a letter to *Nature*, forwarding a suggestion based on some historical research and on personal experience. He proposes the disuse of soap for shaving. He points out that the Romans resorted to the razor to remove their beards without the application of a lather of soap. A factory for making soap has, indeed, been excavated from buried Pompeii, but those writers who have informed us of the daily life of the Romans acquaint us that a pure water bathed the face during shaving. Their soap was used, as Pliny tells us, to impart brilliancy to their hair. The use of soap by barbers is a comparatively modern custom, which had its origin in the days when soap was a scented luxury. Soap, no doubt, aids in the even distribution of water over the hairs, though it is doubtful whether it supports the bristles as some authorities assert. The correspondent to *Nature* assures that journal's readers that soap dulls the sharpness of the razor, while water preserves the keen character of its edge. He begs mankind to test the efficiency of sousing the face with water. His experience is such that, having tried it, he uses no other. Perhaps others, inclined to novelty, will pursue this idea further.

#### BIRTHDAY HONOURS.

Among the recipients of birthday honours are several Australian medical men and scientists.

Professor Walter Baldwin Spencer, Professor of Biology at the University of Melbourne, has been decorated with the K.C.M.G. The work of this distinguished scientist in connexion with ethnology has gained for him a world-wide reputation.

Mr. J. H. Maiden, F.R.S., Director of the Botanic Gardens of Sydney and Honorary Secretary and Fellow of the Linnean Society, has received the Imperial Service Order, in recognition of his botanical researches. It will be remembered that Mr. Maiden recently received the Fellowship of the Royal Society (see *The Medical Journal of Australia*, March 11, 1916, p. 234).

"Barts" men will have learned with satisfaction that Dr. Christopher Addison, M.P., has been created a Privy Councillor.

Four thousand military honours have been awarded.

Surgeon-General William D. C. Williams, C.B., D.D.M.S., has received the Order of Knight Commander of St. Michael and St. George.

Colonel B. J. Newmarch, V.D., has been created a Companion of St. Michael and St. George.

The Distinguished Service Order has been awarded to Major John B. McLean and to Captain Ronald D. Campbell.

#### Bacterized Peat.

On January 12, 1916, Professor Bottomley delivered a lecture at King's College, in the course of which he referred to our food supplies in war time. He pointed out that our methods of agriculture had led us into such a condition that we never have more than two months' food supply in England. He believed that it was the old story, "We have land we have brains, but we do not care about science." He went into statistics of imports of grain and the agricultural work that was being done in different countries, and showed that, although England could supply itself from outside, because of its command of the trade routes, the central countries could go on producing their own food for a long time, because of their greater care of agriculture.

Professor Bottomley has often shown the way that peat, when treated by bacteria, can make plants grow until they are really wonderful, and in his lecture he explained why it cannot be taken up at present. It is a matter of labour. "England has 17,000,000 acres of unused land, which exceeds all the agricultural land of Belgium, Holland and Denmark put together. Ireland has the peat, and if only the two lots of unproductive land could be brought together, something great would result."



## Abstracts from Current Medical Literature.

### OPHTHALMOLOGY.

#### (217) Tenotomy of the Inferior Oblique.

According to W. C. Posey, the credit of the operation of tenotomy of the inferior oblique belongs to Tandolt, who suggested it after paralysis of the superior oblique and to prevent increase in myopia (*Archives of Ophthalmology*, March, 1916). Duane has more recently brought the subject before the profession; his indications for the operation are: (a) paralysis of the superior rectus of one eye, fixation with the other eye, no true spasm; (b) paralysis of the superior rectus of one eye, fixation with same eye, secondary deviation of the other eye from spasm of the inferior oblique; (c) paralysis of the superior oblique, secondary spasm (contracture) of the inferior oblique of the same eye; (d) paralysis of the abductors, with compensatory spasm of the inferior oblique in the same eye; (e) spasm of the inferior oblique not due to paralysis of other muscles in the same or other eye. The form (b) is the most common. The paralysis of the superior rectus may be traumatic or congenital. According to Duane, the symptoms constitute a well-marked syndrome. If the right superior rectus is paralysed, there is (1) moderate restriction of the movement of the right eye, up and to the right (left eye covered); (2) with both eyes open, marked up-shoot of the left eye when the eyes are directed up and to the right; (3) vertical diplopia, with the image of the left eye below, increasing as eyes are directed up and to the right; (4) tilting of the head toward one shoulder, usually the right; (5) condition congenital and sometimes hereditary. The tendon of the muscle is divided at its origin in the lower-inner position of the orbit. A curvilinear incision is made just above and parallel to the lower and inner bony rim of the orbit. A stabismus hook is inserted into the wound and gentle traction made until the muscle is encountered. It is withdrawn and divided by scissors.

#### (218) Gram-negative Diplococci in the Conjunctival Sac.

Robert Blue shows that the Gram-negative diplococci found in the conjunctival sac fall into three groups, the *micrococcus catarhalis*, the *meningococcus intracellularis*, and the *gonococcus* (*Archives of Ophthalmology*, Nov., 1915). The author has formed the following conclusions as a result of his clinical observations. A purulent conjunctivitis, in which Gram-negative diplococci are found in the smears, should be treated as gonorrhoeal ophthalmia. A definite diagnosis of gonorrhoeal infection should be made. A purulent conjunctivitis in a person exposed to infection from the meningococcus, when Gram-negative diplococci are found in the smears, should be treated as a gonor-

rhoeal ophthalmia, but the diagnosis should be held in abeyance until the cultural characters of the cocci have been established. A mild conjunctivitis, in which Gram-negative diplococci are obtained in the smears, should be treated as conjunctivitis in general is treated, and laboratory tests should be carried out for the purpose of arriving at a definite diagnosis.

#### (219) Cyclical Third Nerve Paralysis.

Groethungsen records the case of a man, aged 18 years, who complained that he could not open his right eye at times (*Archives of Ophthalmology*, November, 1915). In the condition of paralysis, the palpebral fissure was 5 mm. wide, the eye slightly abducted and turned down. The pupil was 8 mm. wide and immobile, and the refraction hypermetropic. After 15 seconds in this condition, the eyelid showed three or four spasmodic contractions, and was then raised slowly as high as on the healthy side. The eye at this time was adducted and the pupil contracted to 4 mm., remaining immobile. The refraction by retinoscopy was myopic. This stage lasted for twenty seconds. At the end of this time, the pupil dilated and the lid fell as before. The state of spasm could be lengthened by fixing an object at 15 cm. This suggests that the condition depended on a cortical process.

#### (220) Spontaneous Hæmorrhage from the Conjunctiva.

G. F. C. Wallis reports two instances of spontaneous hæmorrhage from the conjunctiva (*Ophthalmoscope*, April, 1916). The first was in a girl of 12 years, who was brought by the matron of a boarding-school, with the history that the eye and eyelids had become red and swollen on the previous day. On the morning of the consultation the eye began to bleed and a big clot came away. This was the second time. The lids were slightly oedematous, and over a small area at the lower part of the bulbar conjunctiva and fornix was seen a dusky redness. There was also some episcleral swelling and tenderness. She was a healthy girl, and had just started to menstruate. The condition resembled *episcleritis periodica fugax*. Other writers have reported cases, one in a patient with ophthalmia neonatorum, another in a patient suffering from typhoid fever.

#### (221) Purulent Conjunctivitis in Infants.

The investigations of Anna W. Williams and C. Rosenberg, of New York (*Archives of Ophthalmology*, March, 1916) showed that out of 1,000 births in a poor district, eight children had purulent conjunctivitis. Two died, and the other six were cured. In all cases prophylactic treatment had been given; only one case was reported. Data from the Health Department proved that in 47 cases reported in eight months, staphylococcus was present in 100%, gonococcus in 25%, members of the streptococcus-pneumococcus group in 46% and of the influenza bacillus group in 25%. In 37 cases (77%), according

to the mothers' statements, prophylaxis had been used. The fact that purulent conjunctivitis or ophthalmia neonatorum does not always mean an infection with the gonococcus should make physicians more ready to report such cases to the Health Department.

#### (222) Methylene Blue in Eye-Work.

P. H. Adams gives his conclusions after some experience in using methylene blue in eye-work (*Ophthalmoscope*, February, 1916). In acute, pseudo-membranous and chronic conjunctivitis, used in the strength of 1 in 1,000, as a lotion, it proved superior to argyrol, zinc sulphate or mercury. It had no effect on hypopyon ulcer, but was excellent in recent cases of trachoma, used in 3% solution, or as a solid stick. In diplo-bacillary conjunctivitis, the effect was slight and inferior to zinc sulphate. For gonorrhoeal conjunctivitis in adults or babies it was inferior to argyrol. It was especially useful against *staphylococcus aureus*.

#### (223) A Method of Enucleation.

Before the war, E. Valude used to hold the eye during enucleation by a strong thread passed through the cornea (*Ophthalmoscope*, April, 1916). He now performs the operation with three instruments: speculum, forceps with large claws, and strongly curved scissors. The eyeball is seized in the horizontal diameter with the forceps, so placed that the claws are in each side of the cornea, near the limbus. With very strong curved scissors he circumscribes the cornea by rapid section of the conjunctiva. The external rectus is cut, no other instrument but the scissors being used, and then the optic nerve, with one blade of the scissors externally and the other in the depth of the tissues. Lastly, all the other structures are divided. The operation should not take longer than a minute.

#### (224) Digital Compression of the Lachrymal Sac.

J. Santos-Fernandez advocates digital compression of the lachrymal sac for the treatment of dacryo-cystitis, especially in the new-born (*Archives of Ophthalmology*, March, 1916). A drop of fluorescin instilled into the eye will prove the permeability of the nasal ducts, and, in these cases, catheterization is unnecessary and harmful. There are various views as to the cause of dacryo-cystitis in the new-born; occlusion of the lower exit of the nasolachrymal duct, imperforation of the nasal canal, anomalies of development, obstruction by epithelial casts of staphylococcal origin, gonorrhoea and syphilis have all been advanced as the causal factor. Many surgeons have found digital pressure very useful, combined with irrigation.

#### (225) Dispituitarism in a Young Girl.

Sydney Stephenson describes the case of a girl, aged 15 years, who complained of failing sight for three or four months (*Ophthalmoscope*, April, 1916). The vision was  $\frac{1}{2}$  and  $\frac{1}{30}$ . About six weeks later the right vision was reduced to "shad-

ows." The right pupil did not react directly to light. The media were clear, but both optic discs were pale. Nine months later the vision was unaltered. The left temporal field was blind, and a radiograph revealed a greatly enlarged *sella turcica*. The patient was bright and intelligent, but had a peculiar personal appearance, eyes prominent, the left turned slightly outwards and upwards. She had not yet menstruated, had no headache, vomiting or vertigo. Thyroid extract produced no improvement. Surgical treatment was being considered.

#### LARYNGOLOGY AND OTOTOLOGY.

##### (226) Skin Grafting in Mastoid Operation.

H. J. Marriage holds the opinion that, after the antrum and mastoid cells have been opened up for acute mastoiditis, it is inadvisable to employ skin grafting, as the object is to obtain free drainage (*Journ. of Laryng., Rhin. and Otolaryngology*, March, 1916). Skin grafting after the radical mastoid operation was first advocated by Siebenmann in 1893. Various methods for its performance have been suggested since that time. In regard to the cutting of the graft, the author employs the following method. The thigh is abducted and everted. A small sand-bag is placed under the lower end, so as to get a flat surface. The assistant places the ulnar surface of his hand three inches above the knee and draws the skin downwards. The operator then stretches the skin by countertraction towards the hip and cuts a thin graft about 3 in.  $\times$  2 in., always cutting towards the knee. He uses a hollow-ground razor, about half as large again as an ordinary shaving razor. He claims that the cavity heals more quickly than by other methods, and that contraction and stenosis are prevented and granulations cannot extend across the various parts of the cavity, causing persistent discharge. The patient is saved pain, while the healing is more rapid. After 10 days the dressings can be done by the patient himself. Moreover, complicated meatal flaps are not required, and, consequently, much deformity is avoided. In the last place, since the Eustachian tube is closed in the majority of cases, reinfection through the tube is prevented. Although it may be impossible to obtain perfect aseptis of the cavity, the grafts usually take very well, and, even when they fail, islets of cells are left behind, from which the skin quickly grows over the cavity. The author advocates primary skin grafting in all uncomplicated cases of chronic mastoid disease. He performs the usual radical operation, taking care to remove every trace of the disease. The dura of the middle fossa and the lateral sinus are exposed when the appearance of the bone suggests possible implication. A simple meatal flap is then cut, and the tympanum is scraped out. The cavity is disinfected and the bleeding arrested by the application of 20 vol. per cent. hydrogen peroxide; this is syringed out with normal saline at 105°. The cavity

is plugged with gauze during the cutting of the graft. The graft is applied and put into position by Ballance's suction apparatus. It is then covered by a long strip of gauze, dusted with aristol powder. In 34 out of 43 cases healing took place in 2½ months or less. The shortest time occupied was 19 days. The author did not have to remove the graft, on account of supuration, in any of his cases. The hearing was improved in 74.3%, remained unaltered in 5.2% and was deteriorated in 20.5% of his cases.

##### (227) Diphtheria of the Trachio-Bronchial Tree.

H. L. Lynah (*Laryngoscope*, March, 1916) is of opinion that in a great majority of cases of membranous stenosis from trachio-bronchial diphtheria, the infection travels upwards from below, and that the recognition of the nature of the affection in the early stages can only be made from the clinical picture. He finds that the differential diagnosis has to be made from broncho-pneumonia, from foreign bodies, from catarrhal bronchitis and from thymic asthma. The onset of bronchial diphtheria is rarely sudden; the voice is never lost, and, apart from an occasional cough and slight stridor, the condition resembles an ordinary catarrhal cold. The earliest signs are ballooning of the chest, asthmatic type of breathing and unilateral, barrel-shaped chest on the side on which the bronchus is obstructed. There is usually retraction of the sternal notch, and sinking in of the epigastrium. The finger-tips always reveal some cyanosis. On auscultation, the respiratory murmur is found to be diminished or absent over the affected side, as compared with the harsh murmur over the unaffected lung. This may be so harsh as to be mistaken for bronchial breathing. It was often possible to hear the flapping of a loosened piece of membrane when the stethoscope is applied to the sternal notch. In the treatment of this condition, antitoxin should be given as early as possible before a bacteriological diagnosis can be carried out. The author advocates the mechanical removal of membrane through the bronchoscope by means of suction. A vacuum of five inches suffices to remove all the membrane and causes very little bleeding. In the treatment of tracheo-bronchial diphtheria in children he always leaves the bronchoscopic tube in the bronchus from which the membrane has been removed for a period from 15 to 30 minutes after spraying with antitoxin.

##### (228) Papilloma of the Nose.

True papilloma or papillary fibroid springing from the region of the middle turbinate, bulla and infundibulum appears to be a very rare condition. J. G. Callison records a case in a coloured woman, aged 40 (*Laryngoscope*, March, 1916). Eight years before he saw the patient a growth was removed from the left nostril, and a few days later a small polypoid growth was also removed. The patient was not subjected to further treatment until she

saw the author. The right nostril was practically occluded by hypertrophic rhinitis. The left was filled with a new growth, which extended to within a quarter of an inch of the anterior nasal opening. The growth was dry, wrinkled and of a dark colour. It extended backwards and completely filled the naso-pharyngeal orifice, and covered the septum. An attempt to remove the growth with a snare failed, and forceps were therefore resorted to. In this way 24 grms. of tumour mass were removed piece-meal. The origin appeared to be at the lower border and external surface of the middle turbinate, the bulla and infundibulum. On microscopical examination, the growth proved to be a papilloma, with numerous layers of columnar epithelium, with a large blood-vessel in the centre of each papilla. A poorly formed basement membrane was detected. Having determined that the growth was a papilloma, he irrigated the antrum through a cannula, and found a considerable quantity of pus. The author considers that it would be necessary to deal with the antrum by a Caldwell-Luc operation and the ethmoids and frontal sinuses by a Mosher operation, to clear out any proliferative changes that may be present.

##### (229) Impaction of a Piece of Bone in the Œsophagus.

D. R. Patterson records a case of a man aged 35, who swallowed a piece of bone in some soup (*Proc. Royal Soc. of Medicine*, January, 1916). An unsuccessful attempt was made to pass a bougie. On the following day the patient was unable to swallow. The obstruction was seen opposite the level of the sternal notch. There was œdema of the mucosa. Ordinary forceps were employed, but the author failed to grasp the mass. On the following day he used Irwin Moore's forceps, and, having seized the bone, succeeded in withdrawing it, care being paid to protect the mucosa from a sharp projection on the left. Some wounding of the mucous membrane was seen after the extraction. The patient died six days later from septic absorption. Œsophagotomy had been considered, but it was thought that the site of impaction and the short thick neck of the patient precluded it.

##### (230) Sarcoma of the Ethmoid.

W. M. Mollison records a case of a woman aged 20, who had applied for treatment at Guy's Hospital on account of pain about the right eye and swelling in the nasal process of the right maxilla. There was some right-sided nasal obstruction (*Proc. Royal Soc. of Medicine*, January, 1916). Microscopical examination of a piece of tissue removed proved the growth to be a sarcoma. The nasal process of the maxilla was removed through a Moore's incision and the ethmoidal cells opened. The origin of the growth was traced to the lining of the cells. The whole growth appeared to be encapsuled. It was easily removed. There was no recurrence 10 months later.

## PIROPLASMOSIS IN NEW SOUTH WALES.

After a continuous fight for about nine years on the part of the New South Wales authorities on its northern border against the introduction of ticks and tick fever from Queensland, pathogenic ticks have at last succeeded in penetrating the defences at one part, with the result that piroplasmosis (tick fever or red water) has appeared on a farm on the border adjacent to Queensland, and a number of cattle have died of the disease.

Owing to the importance attaching to the decision, although the clinical features and lesions were indicative of piroplasmosis, the pathologist making an examination of the specimens submitted did not feel justified in arriving at a positive diagnosis without demonstrating the causal organism, viz., *Piroplasma* or *Babesia bigemina*. This could not be done, principally because the blood smears were so badly prepared that no blood corpuscles could be detected in the mass. As a result of this, some delay ensued, until another animal became sick. On this occasion, under special directions, blood smears were prepared that could be examined microscopically. The result of this examination was that piroplasmosis was diagnosed definitely. During the interval, however, the Stock Department had not been idle. Measures were immediately taken, as if the disease had been positively diagnosed from the outset, so that there should be no chance of pathogenic ticks being conveyed from the presumably infected farm to clean territory, the whole farm being placed under strict quarantine.

At present, the farm, which abuts upon the Queensland border, is being subjected to a system of control which aims at getting rid of the cattle exposed to infection, and, with them, the pathogenic tick. The object is to safeguard the State with as little loss and inconvenience to the owner of the cattle as possible.

In dealing with diseases of the nature of bovine piroplasmosis, measures eminently suitable for some bacterial and protozoal diseases cannot be applied. The immunity resulting from an attack of this form of piroplasmosis is not an *immunitas sterilis*, the causal organism being harboured in the blood for a varying period after recovery. Consequently, such an animal is always a potential source of infection. Infection, however, cannot be naturally transmitted to healthy animals unless the intermediate host, i.e., the tick, be present.

In the case of the present outbreak, it must be accepted as certain that not all the animals contracting piroplasmosis have died, but that some have recovered, and are carrying the causal organism in their blood. The farm in question has, from the time ticks first made their appearance on the border, been exposed to the invasion of ticks every year, and they have from time to time been detected upon cattle. Until the present occasion, the parents of these ticks had not fed upon infected animals, and, therefore, were non-pathogenic. These infestations took place in spite of the most vigilant care, and so long as nothing is done on the Queensland side of the border, it is reasonable to anticipate that ticks will again gain admission to the now infected farm. Therefore, so long as the present cattle remain on the premises, the recovered ones will act as a centre of infection for the tick to spread it. There are several measures by which the danger of spread of the disease could be effectually suppressed, and it should be remembered that far more drastic remedies could be applied in the present case, where the infected area is small, than would be practicable if the area were a large one.

The first course that suggests itself is to slaughter all the cattle exposed to infection, or to remove them across the border into Queensland, after dipping. No objection could be raised against the latter proceeding, as that locality is already heavily infected. The farm would then have to be kept free from cattle for a period determined by the life history of the cattle tick. Thus the whole of the ticks now on the farm would be starved out, or, if animals other than cattle were kept on the place in the meantime, the progeny of such ticks would become non-pathogenic. The farm could then be re-stocked with cattle. Another, but less drastic, measure could be adopted, by which the farm is not left idle in the meantime.

The first is to remove all the present cattle in the way indicated, admit clean, non-infected cattle at once to the

farm, in order that the progeny of the ticks dropped from the previous cattle might be picked up and destroyed by dipping the animals. Then, when all the ticks had been got rid of, this second lot of cattle could be disposed in the same manner as the first and the farm re-stocked again without any risk. This would involve little or no loss to the owner, what loss did occur being borne by the State. Such a method, however, is complicated. Another drawback being that there is a possibility of the second lot of cattle picking up infected ticks and thus becoming affected with piroplasmosis, as in the case of the original animals. In such a case, the authorities would be in a position of "as you were."

The third method, and the one it is believed that has been adopted by the State authorities, is to leave the original cattle upon the farm and to dip them regularly and at as short intervals as possible. Meanwhile, the farm is to be kept in strict quarantine. When the inspectors are satisfied that the whole of the ticks upon the place have been destroyed and that none have had opportunity to mature upon the cattle, to drop off and to deposit their ova, the animals could be disposed of as indicated and the farm re-stocked.

This method, if carried out properly and with no relaxation of vigilance, should be efficacious, but it should be remembered that infected cattle are in the meantime on the farm, and, unless every precaution is taken, there is a danger of the infected area spreading.

The boundary between the heavily tick-infested areas of Queensland and the tick-free country of New South Wales is, in many places, only a wire fence. Although a force of tick inspectors is constantly engaged in preventing the passage of ticks across the border, there are a variety of ways in which the tick can evade their vigilance and make its way on to clean territory in New South Wales. This, as has already been mentioned, has happened on a number of occasions, and will continue to occur, in spite of all that can be done. The only way to remove the menace is for action to be taken on the northern side of the border to clear up the ticks there. Apparently, however, such action is not contemplated by the northern State, and, as long as things remain as at present, all that New South Wales can do is to not relax any precautions to keep the pest out, and, when it does gain admission, to take every measure at once to eject it.

It is suggested by some that when a farm does become infected, all of the surviving cattle should be inoculated in order to prevent further loss. Such a proceeding may be a wise one where the whole of the surrounding country is infected, as in parts of Queensland, but in New South Wales it is a counsel of despair, as it tacitly admits that the disease cannot be eradicated, and that the mortality must therefore be minimized by infecting the susceptible cattle artificially.

In dealing with the prevention of tick infestation and the tick-borne disease, piroplasmosis, the public should remember that, without their assistance, the Government officials are considerably handicapped in their work, and farmers and others must be prepared to put up with some amount of inconvenience in the threatened localities. At present, unfortunately, there appears to be too much of that very common tendency of thinking that certain measures are excellent, when they are applied to the other man, but to consider them iniquitous when they have a personal application. In connexion with tick fever, farmers and others have bitterly complained of restrictions and other precautions against infestation, but as soon as the danger makes its presence felt, there is a tendency to rush to the other extreme, and complain that the Government has been lax in carrying out its duties.

On the Northern Rivers and in parts of Southern Queensland, piroplasmosis or tick fever is often confounded with a condition which existed long before ticks made their appearance, viz., enzootic hemoglobinuria or, as it is known further south, Illawarra red water. The latter disease is probably not of bacterial or protozoal origin, but is possibly due to the presence of large amounts of oxalates in the food.

The vexed question of Federal or State action crops up in connexion with the control of the tick. The campaign



undoubtedly costs New South Wales a large sum annually, and this is chiefly due to negligence in the past and apathy in the present on the part of Queensland. Primarily, the work of tick control benefits the farmers in the former State, but, incidentally, the work is benefitting the Commonwealth, because, in spite of ill-informed opinions to the contrary, there is nothing climatically to prevent the tick spreading over the greater part of the south of Australia.

Infestation is always coming in from Queensland to New South Wales, and the latter State can do nothing to attack the enemy in its own camp. On the face of it, it appears that a good case has been made out for Federal, rather than State control of the work of tick eradication, as at present the tick is not only a source of enormous economic loss to the Commonwealth, but is an ever-present danger to the herds in unaffected localities.

### Medical Societies.

(Affiliated with the British Medical Association.)

#### NORTH-EASTERN MEDICAL ASSOCIATION, NEW SOUTH WALES.

The annual meeting of the North-Eastern Medical Association was held at the Freemason's Hotel, Lismore, on April 12, 1916, Dr. J. Coen, the President, in the chair.

The business of the meeting consisted of the consideration of various letters received. After a number of resolutions had been passed, an adjournment was agreed to.

The adjourned meeting was held on May 17, 1916, Dr. T. J. Henry occupying the chair in the absence of the President and Vice-President.

Dr. R. V. Graham moved, on behalf of Dr. J. Coen:—

That no member of this Association shall visit any town where there is a resident practitioner for the purpose of seeing patients, unless he shall visit at the request of, or in consultation with, such resident medical practitioner.

Dr. Graham seconded the motion.

Dr. T. C. C. Evans moved and Dr. J. I. Robertson seconded that the words "without communicating with him, if possible," be inserted after the word "patients" and that the words "at the request of" be deleted.

The amendment was put to the meeting, and was lost by three votes to seven. The original motion was also negatived by one vote to nine.

Dr. A. J. Opie moved and Dr. J. I. Robertson seconded:—

That, in the opinion of this meeting, it is inimical to the interest of members to allow periodical visiting to any centre at which the visiting practitioner does not reside, provided that nothing in this resolution shall prevent any member visiting any other centre in response to *bona fide* calls from patients not being attended by any other practitioner.

Dr. C. Franceschi moved and Dr. G. Romeo seconded, that the words "except he obtained permission by the Branch" be added.

The amendment was carried, but the amended motion, on being put to the meeting as a substantive motion, was lost.

It was moved by Dr. T. J. Henry, seconded by Dr. C. Franceschi, and carried:—

That the delegate be instructed that out-patient departments in country hospitals should be recognized as necessary appurtenances of the hospitals, regardless of the character of the case, provided always that necessitous cases only be treated.

Dr. T. C. C. Evans desired to place on record his thanks to the Association for the assistance rendered to him in the conduct of his practice during his illness. He mentioned the names of Drs. Coen and Graham who had rendered the assistance referred to.

Dr. A. J. Opie moved and Dr. J. G. Lentaigne seconded:—

That the remuneration under the war emergency scheme be at the rate of £2 2s. per day for periods of five days or under and for periods of over five days it shall be at the rate of £10 10s. per week, plus reasonable travelling expenses. This is to be the minimum rate.

The motion was carried.

It was also resolved that any dispute in connexion with the amount payable for expenses should be referred to the North-Eastern Medical Association, whose decision should be final.

It was moved by Dr. T. J. Henry, seconded by Dr. J. G. Lentaigne, and carried:—

That the procedure in selecting men to render assistance in the war emergency scheme be as follows: Members who have signified their willingness to assist shall be called in rotation, according to their seniority in the town, provided that no member shall be called until all the other members have been called the same number of times.

The following motion was moved by Dr. A. J. Opie, seconded by Dr. C. Franceschi, and carried:—

That the Secretary be instructed to inform members that the existence of the North-Eastern Medical Association is imperilled by the lapse of general meetings on recent occasions, owing to the want of a quorum, and that members resident in a town, in which two or more men are practising, be asked to arrange that at least one man from such town be present and provided with proxies at each meeting.

In such cases, if a roster be drawn up, attendance would only be necessitated from each member once a year.

The following office-bearers and members of the committee were elected for the ensuing year:—

*President:* Dr. J. Coen.

*Vice-Presidents:* Drs. H. T. S. Bell and C. Franceschi.

*Delegate:* Dr. T. J. Henry.

*Hon. Secretary and Hon. Treasurer:* Dr. R. V. Graham.

*Honorary Auditor:* Dr. J. I. Robertson.

*Members of the Committee:* Dr. O. A. Diethelm, Dr. D. D.

Gibson, Dr. T. G. A. Evans, Dr. W. Cross, Dr. R.

Belli, Dr. T. J. Henry, Dr. P. Corlis, Dr. A. J. Opie,

Dr. A. F. Parker and Dr. W. H. Tomlins.

The draft rules for Local Associations were then considered. It was resolved to recommend the adoption of the model rules, with a few minor amendments.

### Naval and Military.

The friends of Dr. A. J. Brady have learned with deep regret of the loss of his son-in-law, Captain Cecil Prowse, the Commander of the *Queen Mary*, which was sunk in the recent naval engagement.

We regret to record that Major J. Reiach is included in the list of those ill in the 173rd casualty list, and that the name of Captain J. W. Hart appears under the heading ill in the 174th list. It is announced in the latter list that Captain A. McKillop is progressing favourably.

The following appointments have appeared in the *Commonwealth of Australia Gazette*, No. 64, under date of May 25, 1916:—

#### 1st Military District.

Australian Army Medical Corps Reserve—

Honorary Major E. S. Jackson to be Consultant Surgeon, with honorary rank of Lieutenant-Colonel. Dated 1st March, 1916.

(This cancels the notification respecting this officer which appeared on page 649 of *Commonwealth of Australia Gazette*, No. 37, of 23rd March, 1916.)

#### 2nd Military District.

Australian Army Medical Corps Reserve—

Honorary Major Sir A. MacCormick to be Consultant and Surgeon, with honorary rank of Colonel. Dated 20th February, 1916.

(This cancels the notification respecting this officer which appeared on page 499 of *Commonwealth of Australia Gazette*, No. 31, of 2nd March, 1916.)

#### 3rd Military District.

Australian Army Medical Corps Reserve—

Honorary Captain G. G. Nicholls to be Senior Medical Officer, Australian Imperial Force Camp, with temporary rank and pay of Major.

at rate prescribed by Universal Training Regulation 160. Dated 1st May, 1916.

Honorary Major G. A. Syme to be Consultant Surgeon, with honorary rank of Colonel. Dated 20th February, 1916.

(This cancels the notification respecting this Officer which appeared on page 499 of *Commonwealth of Australia Gazette*, No. 31, of 2nd March, 1916.)  
4th Military District.

#### A.A.M.C.—

Arthur Murray Cudmore to be Consultant Surgeon, with honorary rank of Lieutenant-Colonel. Dated 1st March, 1916.

(This cancels the notification respecting this officer which appeared on page 649 of *Commonwealth of Australia Gazette*, No. 37, of 23rd March, 1916.)  
Army Medical Corps.

#### To be Honorary Lieutenant—

Lieutenant (provisional) G. N. Roberts, 48th (Koo-yong) Infantry.

Honorary Lieutenant R. Godson, A.A.M.C.R.

Honorary Lieutenant G. K. Satchell, A.A.M.C.R.

Honorary Lieutenant F. I. Ferris, A.A.M.C.R.

Honorary Lieutenant H. W. L. Kelly, A.A.M.C.R.

Honorary Lieutenant B. B. Ruse, A.A.M.C.R.

Honorary Lieutenant H. E. Stevens, A.A.M.C.R.

Honorary Lieutenant N. E. Lockhart, A.A.M.C.R.

Honorary Lieutenant G. T. Donovan, A.A.M.C.R.

Honorary Lieutenant R. Fraser, A.A.M.C.R.

Honorary Lieutenant D. McL. Austin, A.A.M.C.R.

Honorary Lieutenant H. C. D. Taunton, A.A.M.C.R.

Honorary Lieutenant H. W. Pottinger, A.A.M.C.R.

Honorary Lieutenant W. J. Patterson, A.A.M.C.R.

Stanley Moore Cordeaux, Herbert Douglas Foote,

Oswald Richmond Murray.

Army Medical Corps.

#### To be Majors—

Captain (temporary Major) H. K. Fry, Deputy Assistant Director Medical Services, 2nd Australian Division. Dated 6th February, 1916.  
1st Australian General Hospital.

Lieutenant-Colonel H. C. Maudsley is granted the temporary rank of Colonel whilst holding the appointment of Consulting Physician, Australian Imperial Force. Dated 6th February, 1916.

#### To be Majors—

Captain W. L. Crowther, Captain S. Kay. Dated 6th February, 1916.

2nd Australian General Hospital—

#### To be Major—

Captain H. V. P. Conrick. Dated 6th February, 1916.

4th Auxiliary Hospital.

Major J. A. H. Sherwin is granted the temporary rank of Lieutenant-Colonel whilst in command. Dated 6th February, 1916.

#### To be Majors—

Captain C. W. Thompson, from appointment Divisional Sanitary Officer, 1st Australian Division; Captain C. Shellshear, from 1st Australian General Hospital; Captain R. S. McGregor, from 4th Infantry Brigade. Dated 6th February, 1916.

Australian Base Depot of Medical Stores.

Captain A. L. Buchanan is granted the temporary rank of Major whilst in command. Dated 6th February, 1916.

The following appointments have been terminated:—  
Army Medical Corps.

Lieutenant-Colonel H. A. Embling, V.D., and Lieutenant-Colonel N. B. Gandevia, V.D. Dated 20th April, 1916.

Lieutenant-Colonel R. T. Sutherland. Dated 26th March, 1916.

Major H. Harris. Dated 2nd May, 1916.

Major A. Y. Fullerton. Dated 29th March, 1916.

Major A. J. Aspinall. Dated 30th April, 1916.

Major W. Sloss. Dated 1st April, 1916.

Captain F. H. Sabiel. Dated 15th March, 1916.

Captain C. Magarey. Dated 31st March, 1916.

Captain H. Stoker, V.D., Captain J. G. Desailly, Captain W. Macansh, Captain J. L. Ross-Soden, Captain H. C. C. Shaw. Dated 1st April, 1916.

Captain A. F. Sinclair. Dated 4th April, 1916.

Captain J. P. M. Black and Captain T. B. Lewers. Dated 20th April, 1916.

Captain S. Dunn. Dated 20th December, 1914.

The following notices have appeared in the *Commonwealth of Australia Gazette*, No. 66, under date of June 1, 1916:—

#### Appointments, etc.

##### 1st Military District.

#### Australian Army Medical Corps Reserve—

Robert Fitzmaurice Harding to be Honorary Captain. Dated 1st October, 1915.

Charles Emanuel Williams, George William Frederic Paul, William Nicoll, Basil Lloyd Hart, Lachlan Martin McKillop and Thomas Oswald Chenoweth to be Honorary Captains. Dated 22nd May, 1916.

Strafford Edmund Wilcox to be Honorary Lieutenant. Dated 22nd May, 1916.

##### 2nd Military District.

#### Australian Army Medical Corps—

Pierre Antoine Leon Quessy to be Captain (provisionally and temporarily) Dated 22nd May, 1916.

#### Australian Army Medical Corps Reserve—

Francis Percival Sandes to be Honorary Major. Dated 9th September, 1915. (This cancels the notification respecting the appointment of this officer which appeared on page 2452 of *Commonwealth of Australia Gazette*, No. 116, of 25th September, 1915.)

Patrick John Collins and Robert Blakeway Wade to be Honorary Majors. Dated 11th August, 1915.

George Watt, Allan Melrose Purves, Fred Stanley Booth, William Gordon-Cumming Smith, Algonon Aaron Cohen, Alfred Nicholas. Chenhall, Alfred Ernest Dagnall Clark, Archibald Irwin Blue, Andrew John Bracken, Frederick Charles Stevenson, and Morris James Plomley to be Honorary Captains. Dated 22nd May, 1916.

Honorary Captain H. Stoker, V.D., is transferred to Australian Army Medical Corps Reserve, 3rd Military District, with seniority as from date of transfer. Dated 1st May, 1916.

##### 3rd Military District.

#### Australian Army Medical Corps Reserve—

Leslie Jack Clendinnen and Samuel Arthur Ewing to be Honorary Majors. Dated 22nd May, 1916.

James Perrins Major and Kenneth Arthur McLean to be Honorary Captains. Dated 22nd May, 1916.

George Alfred Payne and William Dalhousie Flaxman MacGregor to be Honorary Lieutenants. Dated 22nd May, 1916.

Staff Sergeant William David Nicholas to be Honorary Lieutenant. Dated 17th March, 1916.

Honorary Captain H. Stoker, V.D., is transferred from Australian Army Medical Corps Reserve, 2nd Military District, with seniority as from date of transfer. Dated 1st May, 1916.

##### 4th Military District.

#### Australian Army Medical Corps Reserve—

Leonard John Dunstone, Ernest John Frayne and Darcy Rivers Warren Cowan to be Honorary Captains. Dated 22nd May, 1916.

##### 5th Military District.

#### Australian Army Medical Corps Reserve—

Honorary Lieutenant J. B. George to be Honorary Captain. Dated 27th April, 1916.

James Forrest Mitchell, Charles Oswald Tebbutt, Sydney Douglas Eden, Grafton Cameron Dickson Forster, James Beith Wilson, Abraham Jacob Herman, Stanley James Moore Simpson, Gilbert Dowling Henderson, and Samuel Vaughan Selby to be Honorary Lieutenants. Dated 22nd May, 1916.

##### 6th Military District.

#### Australian Army Medical Corps Reserve—

Arthur Ernest Painting to be Honorary Captain. Dated 22nd May, 1916.

Richard Francis Tynan to be Honorary Lieutenant.  
Dated 22nd May, 1916.

#### Promotions.

##### Army Medical Corps.

Lieutenant-Colonel R. E. Roth, D.S.O., V.D., from 5th Field Ambulance, to be Deputy Director Medical Services, and to be Colonel. Dated 6th February, 1916.

The date of promotion of Captain D. M. McWhae to be Major, which appeared in Executive Minute 237/1916, promulgated on page 612 of *Commonwealth of Australia Gazette*, No. 35, dated 16th March, 1916, is amended to read 6th February, 1916.

Lieutenant-Colonel G. W. Barber, from No. 2 Australian Stationary Hospital, to be Assistant Director Medical Services (temporarily), 4th Australian Division. Dated 20th February, 1916.

Major A. H. Marks, from 3rd Field Artillery Brigade (Medical Officer) to be Deputy Assistant Director Medical Services (temporarily), 4th Australian Division. Dated 20th February, 1916.

Lieutenant-Colonel C. H. W. Hardy, V.D., from 6th Field Ambulance, to be Assistant Director Medical Services (temporarily), 5th Australian Division. Dated 20th February, 1916.

Captain J. B. Lewis to be Major (temporarily), whilst holding appointment as second in command of Troops, No. 1 Australian Hospital Ship *Karoola*.

Honorary Major T. G. Wilson to be Lieutenant-Colonel, Australian Army Medical Corps Reserve. Dated 15th May, 1916.

##### 5th Field Ambulance.

Major J. H. Phipps to be Lieutenant-Colonel and to command. Dated 6th February, 1916.

Captain J. K. Adey to be Major. Dated 6th February, 1916.

#### Termination of Appointment.

Lieutenant-Colonel G. C. Craig. Dated 29th May 1916.

### Special Correspondence.

(By Our Special Correspondent.)

#### CANADA LETTER.

##### The Canadian Expeditionary Force.

On New Year's morning it was learnt with a feeling of satisfaction that Sir Robert Borden, on behalf of the Government, had authorized the augmentation of the Canadian force from 250,000 to half a million, "in token of Canada's unflinching resolve to crown the justice of our cause with victory and an abiding peace." The standard is a high one, particularly in view of the fact that a large proportion of the population of Canada (which is about eight millions) is of foreign birth or origin, but recruiting is proceeding rapidly. Thousands of graduates and undergraduates of the universities have already proceeded overseas, and many have already given their lives. Fourth and fifth year medical students have been returned from the front, and are completing their course. A number will graduate next June or July, and, during the summer, special courses will be given in the principal medical colleges, so that the final year students may graduate at the end of 1916 instead of in the spring of 1917. This, of course, means a period of fifteen months' continuous study for the student, and for the teacher continuous teaching for a period of twenty-three months, since another session of eight months must be entered upon as soon as the summer course is over. The students will enlist for service as soon as they have received their degrees.

I have already mentioned the military hospitals supplied by the universities. Since my last letter, the Dalhousie University unit—No. 7 Stationary Hospital—has been recruited, and is now in England. The officer commanding is Lieutenant-Colonel John Stewart, of Halifax, Nova Scotia. The Laval University unit has been enlarged, and is now No. 6 General Hospital. Lieutenant-Colonel George B. E. Beauchamp, the officer commanding, has been promoted to the military rank of colonel. This unit has not yet left Montreal. Additional hospital units have been offered by Western University, London, Ontario, and the University of

St. Francois Xavier, Antigonish, Nova Scotia. The latter has already been accepted by the military authorities. Major H. E. Monroe, of Saskatoon, has returned from the front, and has taken command of the Saskatchewan Stationary Hospital, the gift of the Saskatchewan Medical Association. A hospital has been established in England by the Ontario Government; it is known as the Ontario Military Hospital and is situated at Orpington, Kent. It was opened on February 19th by the Right Honourable Andrew Bonar Law, Secretary of State for the Colonies.

#### Honours to Canadian Physicians.

The following have been appointed Companion of the Order of St. Michael and St. George: Surgeon-General G. Carleton-Jones, of Ottawa, Director of the Canadian Medical Services; Colonel Murray MacLaren, of St. John, New Brunswick, President of the Canadian Medical Association and Officer Commanding of No. 1 Canadian General Hospital; Lieutenant-Colonel Arthur Edward Ross, of Kingston, Ontario, A.D.M.S. of the First Canadian Division and formerly in command of No. 1 Field Ambulance; and Lieutenant-Colonel G. G. Nasmith, of Toronto, who has done splendid work in connexion with sanitation and water supply at the British front in France. The Cross of the Legion of Honour has been awarded by the French Government to Lieutenant C. G. Wright, R.A.M.C., of Toronto, who is with the Scottish Wireless Corps of the Royal Engineers. Lieutenant Wright accompanied the Scott Antarctic Expedition as physicist. The Royal Red Cross has been awarded to Matrons M. K. Macdonald, McLatchey, and Ridley, and to Nursing Sister Tremaine, who had the honour of attending His Majesty the King after his recent accident.

#### Canadian Military Hospitals Commission.

The Canadian Military Hospitals Commission was formed by Order-in-Council dated June 30, 1915, for the purpose of providing convalescent homes and medical treatment for returned invalided and wounded members of the Canadian Expeditionary Force. The benefit of medical treatment was shortly afterwards extended to men who had enlisted but had not yet proceeded overseas. Later, the powers of the Commission were extended to cover the vocational re-education of those soldiers who, through disability, were unable on their return to Canada to resume their former occupations. In October, 1915, an interprovincial conference was held at Ottawa, at which it was arranged that the provision of employment for and the re-education of soldiers should be placed in the hands of provincial sub-commissions, which, in turn, should elect local committees. Voluntary aid and welcome committees have also been appointed in various places, and these sometimes give financial aid to the men and their families. Convalescent homes have been opened all over the country, and, at the moment, there are about 1,300 men undergoing treatment in these homes.

On their return from the front, the men are examined by a medical board at the discharge depot and are classified in one of three classes.

Class 1.—Men for immediate discharge without pension. This class includes men who are unfit for overseas service but capable of taking up their former occupation, and those suffering from disability which is not the result of service and has not been aggravated through service.

Class 2.—Men whose condition may be benefitted by further treatment in convalescent home, hospital, or sanatorium.

Class 3.—Permanently disabled men (such disability due to or aggravated by service), whose cases will be considered by the Pensions Board with a view to pension.

Before leaving the discharge depot, the men are supplied with suitable clothes and with a sum of money not exceeding ten dollars; other moneys to which they are entitled are forwarded to the paymaster of the district to which they are going. The rate of pay for a private is one dollar a day, plus ten cents field allowance. The subsistence allowance is from sixty to eighty-five cents a day and the separation allowance twenty dollars a month.

British or other allied army or navy reservists, who have left Canada during the period of war for active service, will be dealt with exactly as members of the Canadian Expeditionary Force.

The functional and vocational re-education of disabled men is a phase of the work of the Commission that presents many difficulties. A commencement has been made by the



establishment at convalescent homes of preliminary classes, where the men are given instruction in general education and recreative manual work. These classes are open to all those, who are undergoing treatment in the convalescent home in which the class is held, but they are intended primarily for the man who is permanently disabled, to prepare him for further training in some vocation whereby he will be able to support himself, partially at least. In some of the homes instruction in the manufacture of toys is given. Vocational officers are being appointed all over the country, who will work in conjunction with educational committees, under the direction of the provincial commissions. Steps are also being taken to formulate a land settlement scheme, as it is thought that a considerable number of men, who return from the front, will wish to take up land rather than return to their former indoor occupations.

### Medical Appointments.

The resignation of Dr. Kenneth A. Golledge from the position of Medical Officer in the Department of Education has been announced in the *New South Wales Government Gazette* of June 2, 1916. Dr. Golledge has been appointed Government Medical Officer at Boggabri, New South Wales, in the place of Dr. A. E. Blythman.

Dr. G. P. U. Prior has been appointed Medical Superintendent, Mental Hospital, Rydalmere, New South Wales, at a salary of £600 per annum, with £124 allowances.

Dr. A. A. Cooke has been appointed Officer of Health for the Borough of Dunolly, Victoria, in place of the late Dr. W. A. H. Barrett.

Dr. Douglas Oakley White has been appointed Officer of Health for the eastern portion of the Berwick Shire, Victoria.

Dr. N. L. G. Wilson has been appointed Officer of Health for the Epping Riding of the Whittlesea Shire, Victoria, in place of Dr. W. G. H. Cuscaden (resigned).

### Medical Appointments Vacant, etc.

\*For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxi.

Hospital for the Insane, Goodna, Second Assistant Medical Superintendent.

Hobart General Hospital, Junior House Surgeon.

Texas District Hospital, Queensland, Medical Officer.

Brisbane Hospital, Resident Medical Officer.

### Medical Appointments.

#### IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
<b>QUEENSLAND.</b>	
(Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute.
<b>WESTERN AUSTRALIA.</b>	
(Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.

#### Branch.

#### APPOINTMENTS.

	Department of Public Instruction—New Appointments as Medical Officer, Ophthalmic Surgeon, Ear, Nose and Throat Surgeon, Physician. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Wcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wall-end.
<b>NEW SOUTH WALES.</b> (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	
<b>SOUTH AUSTRALIA.</b> (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
<b>NEW ZEALAND: WELLINGTON DIVISION.</b> Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

### Diary for the Month.

- June 13.—N.S.W. Branch, B.M.A., Ethics Committee.
- June 14.—South Sydney Med. Assoc (N.S.W.).
- June 15.—Vic. Branch, B.M.A., Council.
- June 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
- June 21.—W. Aust. Branch, B.M.A., General.
- June 22.—Q. Branch, B.M.A., Council.
- June 27.—N.S.W. Branch, B.M.A., Medical Politics Committee, Organization and Science Committee.
- June 28.—Vic. Branch, B.M.A., Council.
- June 29.—S. Aust. Branch, B.M.A., Annual General Meeting.
- June 30.—N.S.W. Branch, B.M.A., Ordinary.
- July 4.—N.S.W. Branch, B.M.A., Council (Quarterly).
- July 5.—Vic. Branch, B.M.A., Branch.
- July 7.—Q. Branch, B.M.A., Branch.

#### EDITORIAL NOTICES.

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